U.S. Department of Energy
Ohio Field Office
Fernald Closure Project

Remedial Design Fact Sheet For Operable Unit 4 Silo 3 Remedial Action – Contingency Packaging Approach

December 2005

Overview

This Remedial Design Fact Sheet documents planned contingency actions necessary for completion of the packaging and disposal of Silo 3 material. The contingency approach involves the option for utilizing an alternate retrieval and packaging approach to the pneumatic and mechanical retrieval and packaging approaches outlined in the existing Remedial Design for Silo 3. The alternate approach will be utilized as necessary, in combination with the existing pneumatic and mechanical retrieval and packaging systems, to complete the retrieval, packaging, and offsite disposal of Silo 3 material. The contingency approach consists of:

1. A manned, enclosed cab, front-end loader will be utilized to retrieve material from Silo 3 and load it directly into a disposal container in the excavator room.
2. The direct loading method will preclude the addition of the liquid additive solution used as part of the existing packaging process to reduce the dispersability of the material. As required by the ROD Amendment for Silo 3, the double packaging configuration described below will ensure safe and compliant transportation of the Silo 3 material without the addition of the additive solution.
3. The package will consist of a 96ft^3 double layer, coated woven polypropylene soft-sided package, with a double 6-mil poly liner rather than the sealed 30-mil PVC inner liner. The new soft-sided package configuration has been tested (drop and stacking tests) to verify compliance with Department of Transportation (DOT) IP-2 requirements.

The soft-sided packages will be closed as currently done, loaded into an overpack container (4-8 packaged per overpack), and loaded onto a flatbed truck for transportation to Envirocare.

An alternate package configuration, consisting of a 96ft^3 soft-sided package with a single inner liner, may also potentially be used. These packages would be closed and loaded into an IP-2 certified Sea/Land container for shipment to Envirocare.

Based upon evaluation of the characteristics of the material being encountered in the silo, the existing pneumatic and mechanical retrieval and packaging systems will be continue to be utilized when possible. The contingency approach outlined below is intended for use as a third option for retrieval and packaging of material that does not lend itself to the other two methods. Once the contingency option is implemented, Silo 3 operations management will retrieve and package the remaining Silo 3 material by selecting from the three available methods (pneumatic retrieval, mechanical retrieval, or contingency direct loadout) based upon observation and assessment of the characteristics of the material being encountered in the silo.

Background

More than 1500 containers of Silo 3 material have been successfully retrieved, conditioned, and packaged to date. Based upon observations of the inside of Silo 3 since opening the east wall, up to 350 additional containers are estimated to be required to package the remaining Silo 3 material.

The material encountered adjacent to the east wall of the silo since opening the silo wall has been different in character than the material processed previously, consisting of a combination of a mixture of hard-chunky material and moist, mud-like material. This combination of material has been very difficult to retrieve, leading to problems with plugging of retrieval equipment and significantly increasing the effort, time, and personnel exposures associated with retrieving the material using the existing system.

Basis for the Change

The potential for operational difficulties during retrieval and packaging of Silo 3 material, and resulting potential need for implementing an alternate approach, was recognized during development of the current Silo 3 remedy. The ROD Amendment for Silo 3 specifies that “Under the conditions where the costs

and/or projected worker exposures associated with the application of one or more of the additives become disproportionate to the potential benefits gained…" DOE would implement a contingency approach, such as a double-packaging system, to ensure safe transportation and disposal of the Silo 3 material in lieu of conditioning with the liquid additive mixture.

Based upon the physical characteristics of the material currently being encountered near the bottom of Silo 3, and the impact of these characteristics on the pneumatic and mechanical retrieval systems, the change documented above is necessary to ensure worker safety, minimize personnel exposures, and facilitate timely completion of the Silo 3 remedy, and is consistent with the current remedy for Silo 3.

For additional information concerning this change, please contact Gary Stegner, DOE – Ohio Field Office Public Affairs at (513) 246-0074, or e-mail at gary.stegner@ohio.doe.gov. This Fact Sheet, and other documentation concerning implementation of the Silo 3 remedy, is available on the Fernald Closure Project web site (www.fernald.gov) or at the Fernald Closure Project Public Environmental Information Center, 690 East Cresentville Road, Cincinnati Ohio 45246, (513) 648-5051.